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Tool and Technique for Restraining Live-Captured American Martens and Fishers

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Abstract

Restraining live-captured animals poses challenges when working alone, especially in remote field locations. While studying American martens (*Martes americana*) and fishers (*Martes pennanti*) in Michigan, we developed a new tool, trap combs, to restrain a live-captured animal in the trap. The construction and use of trap combs are described.

Traditional methods of restraining live-captured American martens (*Martes americana*) in the field have included the use of holding cones and/or heavy leather gloves (Newby and Hawley 1954; Francis and Stephenson 1974; Campbell 1979; Archibald and Jessup 1984; Katnik 1992; Bull et al. 1996). Both methods require that the live trap be opened, possibly resulting in the escape of the captured animal. These techniques usually require additional field personnel to ensure that the animal does not escape and that the immobilizing drug can be delivered quickly and effectively.

Roger Powell (North Carolina State University, pers. commun.) used a plunger to restrain fishers (*Martes pennanti*) in a portion of the live trap. However, this method also requires opening the trap. Arthur (1988) did not restrain captured fishers but used a jab stick for drug delivery while the animal was in the trap. Jab sticks can be effective but the drug dosage may be incorrect. Others have not processed animals in the field, preferring to move them while still in the trap to the laboratory for processing (Francis and Stephenson 1974; Kelly 1977; Leonard 1980; Raine 1982; Taylor and Abrey 1982).

American martens and fishers are members of the weasel family. Both species exhibit strong sexual dimorphism with the male being considerably larger than the female. Male martens weigh 470 to 1,250 g with body length of 56 to 68 cm; females weigh 280 to 850 g with a body length of 50 to 60 cm (Clark et al. 1987). Male fishers weigh 3,500 to 5.500 g and have a body length of 90 to 120 cm; females weigh 2,000 to 2,500 g and have a body length of 75 to 95 cm (Powell 1981).

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Trap Comb Technique

The trap comb technique was developed to facilitate the study of American martens and fishers within the USDA Forest Service's McCormick Wilderness Area (MWA) in Michigan. Because the MWA is a Congressionally-designated wilderness, the equipment required to capture, restrain, and process animals must be carried in. Because it was not feasible to pack a variety of restraints, trap combs were developed so that one person could quickly restrain animals without removing them from the trap or the field.

Trap combs are wooden comb-like structures (Fig. 1) that when inserted into a trap reduce the interior space to the point where the captured animal cannot move (Fig. 2). Once restrained, the animal can be easily drugged, allowing removal for weighing, sexing, and aging and/or fitting with a radio collar.

Our trap combs were used in combination with Tomahawk,[1] single-door, collapsible live traps that measured 9 by 9 by 26 inches or 10 by 12 by 32 inches.

The traps were kept dry by placing them on a bed of sticks covered with balsam fir boughs. Large sticks were pushed into the ground on each side of the trap so that the captured animal or a potential predator could not roll the trap. The sides, back, and top of the trap were covered with a thick layer of balsam fir boughs, followed by a garbage bag or large piece of tree bark and another layer of fir boughs. The bag/bark protected the captured animal from severe weather and prevented the trap trigger mechanism from getting wet and freezing in the open position. Small pieces of balsam fir boughs or northern white-cedar were placed in the trap, providing bedding material for the captured animal. The trap was baited with beaver scraps that were tied to the top of the trap behind the trip-plate. A cubby set was complete when the only light entering the set was from the door.

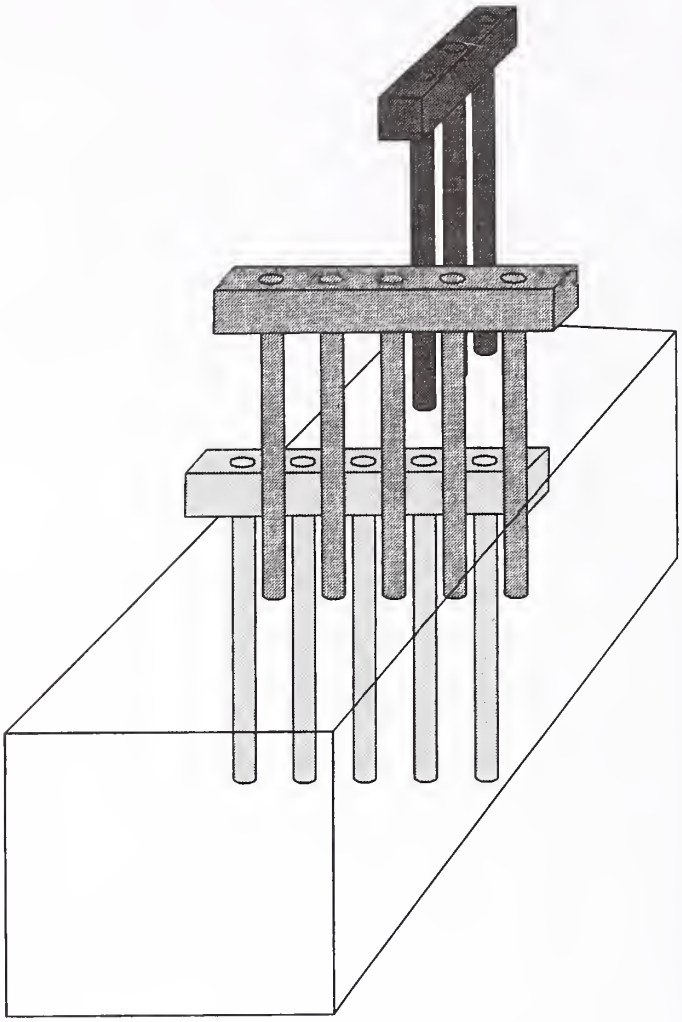

Figure 1.—Trap combs are wooden structures that when inserted into a live trap can be used to restrain a captured animal.

The cubby sets were snug but captured animals did not seem to resist the trap. Instead, they usually ate the available food and pulled the bedding into a nest. Bull et al. (1996) reported that a darkened trap reduces an animal's stress and efforts to escape. All handling procedures were approved by the Institutional Animal Care and Use Committee at Michigan Technological University.

Three trap combs were required to handle a captured animal—two large combs that fit the width of the trap and one small comb that moved the captured animal into a corner (Fig. 3). Large trap combs were constructed by cutting a 1.5- by 1.5-inch block of wood to a length of approximately 11 inches. Five 1-inch-diameter holes were drilled through the block, with the centers of each hole at 2-inch intervals. Next, five 18-inch-long (1-inch-diameter) maple dowels with one end cut diagonally and tapered to a rounded point were inserted into the holes and glued and nailed in place. The smaller trap comb consisted of a 7-inch block and three dowels.

Results

Captured American martens were silent until the trap was pulled from the cubby set. Then they would scream, growl, and lunge. Three combs were required to restrain the martens. They were able to squeeze between the rungs of a single comb, so two staggered combs were needed to move these animals to the rear of the trap. The third, smaller comb pinned the martens in an upright position.

[1]The use of trade, firm, or corporation names in this publication is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by the U.S. Department of Agriculture or the Forest Service of any product or service to the exclusion of others that may be suitable.

Figure 2.—A cubby set and live trap were used to capture American martens and fishers in the McCormick Wilderness Area in Michigan. Note that the trap is partially pulled from the set.

Fishers were silent in the trap until it was pulled from the cubby set. Then they tended to roll on their backs and emit scent. Although they were submissive and not as vocal and aggressive as martens, fishers were even more difficult to restrain because of their larger size and greater strength. Depending on the size of the fisher, one to three trap combs were required for restraint. Frequently, fishers would place their back against the rear of the trap and push against the comb with all four paws. It required effort to move a fisher to the rear of the trap, but the rungs of the comb fit through the bottom of the trap. Once in place, the comb and the trap absorbed the pressure, allowing the handler to drug the animal. The combs allowed one person to restrain both the agile marten and the powerful fisher without opening the trap.

The use of trap combs also allowed the quick and safe release of recaptures and nontarget animals (raccoons, bobcats, skunks, and weasels). A comb placed behind the door of the trap allowed the handler to open the door without fear of being bitten. Once the door was opened, the comb was removed and the captured animal released.

Figure 3.—Traps combs were used to pin an American marten into the corner of a trap.

Summary

The major advantages of trap combs are: (1) one person can easily handle a captured animal; (2) the animal is pinned tightly so that a drug can be administered safely and effectively; (3) the trap need not be opened until the animal is unconscious; (4) handling time is reduced; (5) all processing can be completed in the field; (6) the combs are lightweight, compact, and easily strapped onto a backpack; and (7) they can be used on animals of different sizes.

Literature Cited

Archibald, W. R.; Jessup, R. H. 1984. **Population dynamics of pine marten (*Martes americana*) in the Yukon Territory.** In: Olson, R.; Hastings, R.; Geddes, F. eds. Northern ecology and resource management. Edmonton, AB: University of Alberta Press: 81-97.

Arthur, S. A. 1988. **An evaluation of techniques for capturing and radio collaring fishers.** Wildlife Society Bulletin. 16(4): 417-421.

Bull, E. L.; Heater, T. W.; Culver, F. G. 1996. **Live-trapping and immobilizing American martens**. Wildlife Society Bulletin. 24(3): 555-558.

Campbell, T. M. 1979. **Short-term effects of timber harvests on pine marten ecology**. Fort Collins, CO: Colorado State University. 71 p. M.S. thesis.

Clark, T. W.; Anderson, E.; Douglas, C.; Strickland, M. 1987. ***Martes americana***. Mammalian Species. 289: 1-8.

Francis, G. R.; Stephenson, A. B. 1974. **Marten ranges and food habits in Algonquin Provincial Park, Ontario**. Res. Pap. 91. Ottawa, ON: Ontario Ministry of Natural Resources. 53 p.

Katnik, D. D. 1992. **Spatial use, territoriality, and summer-autumn selection of habitat in an intensively harvested population of martens on commercial forestland in Maine**. Orono, ME: University of Maine. 136 p. M.S. thesis.

Kelly, G. M. 1977. **Fisher (*Martes pennanti*) biology in White Mountain National Forest and adjacent areas**. Amherst, MA: University of Massachusetts. 178 p. Ph.D. dissertation.

Leonard, R. D. 1980. **The winter activity and movements, winter diet, and breeding biology of the fisher (*Martes pennanti*) in southeastern Manitoba**. Winnepeg, MB: University of Manitoba. 181 p. M.S. thesis.

Newby, F. E.; Hawley, V. D. 1954. **Progress on a marten live-trapping study**. Transactions of the North American Wildlife and Natural Resources Conference. 19: 452-461.

Powell, R. A. 1981. ***Martes pennanti***. Mammalian Species. 156: 1-6.

Raine, R. M. 1982. **Range of juvenile fisher, *Martes pennanti*, and marten, *Martes americana*, in southeastern Manitoba**. Canadian Field Naturalist. 96: 431-438.

Taylor, M. E.; Abrey, N. 1982. **Marten (*Martes americana*) movements and habitat use in Algonquin Provincial Park, Ontario**. Canadian Field Naturalist. 96(4): 439-447.

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